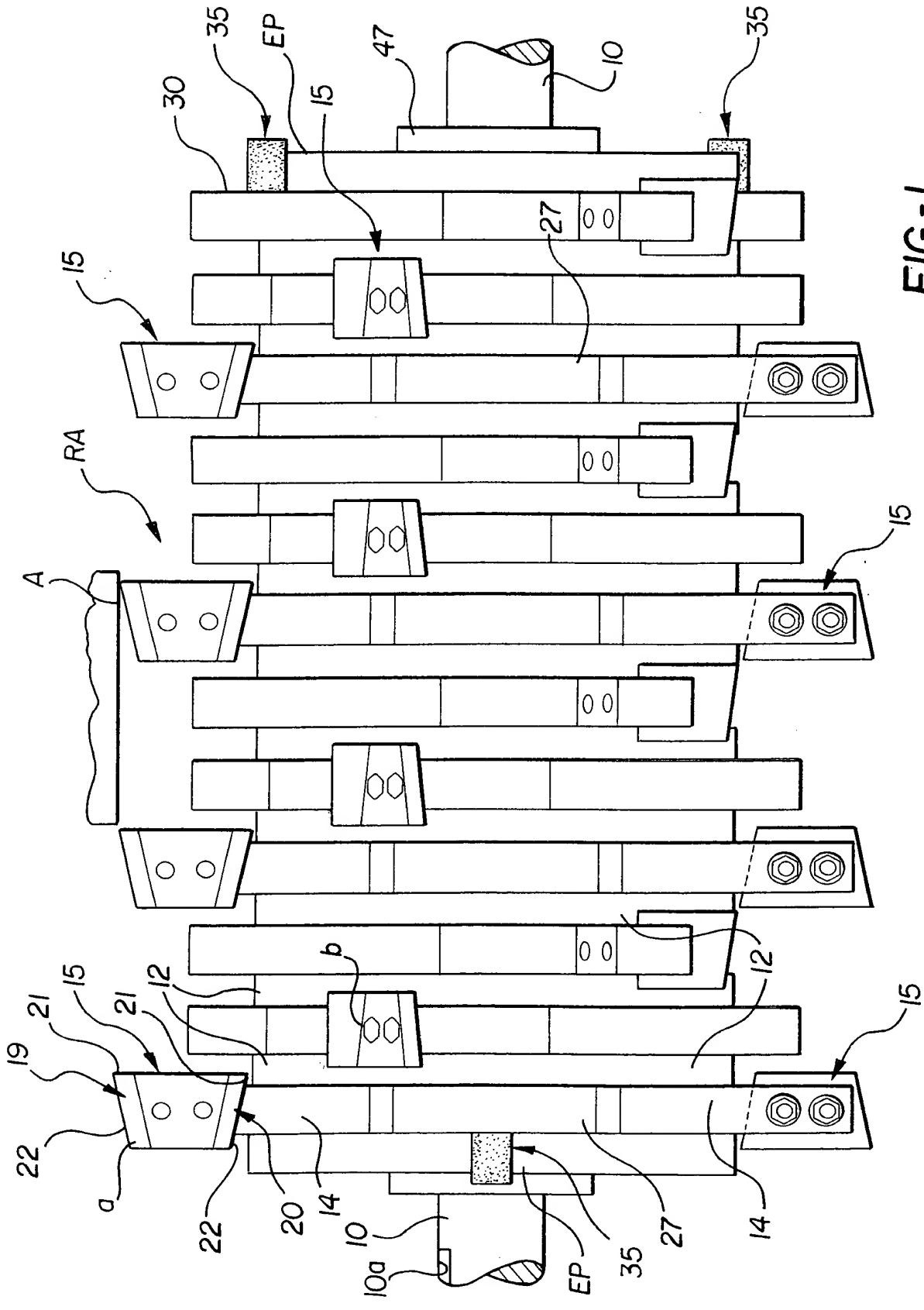
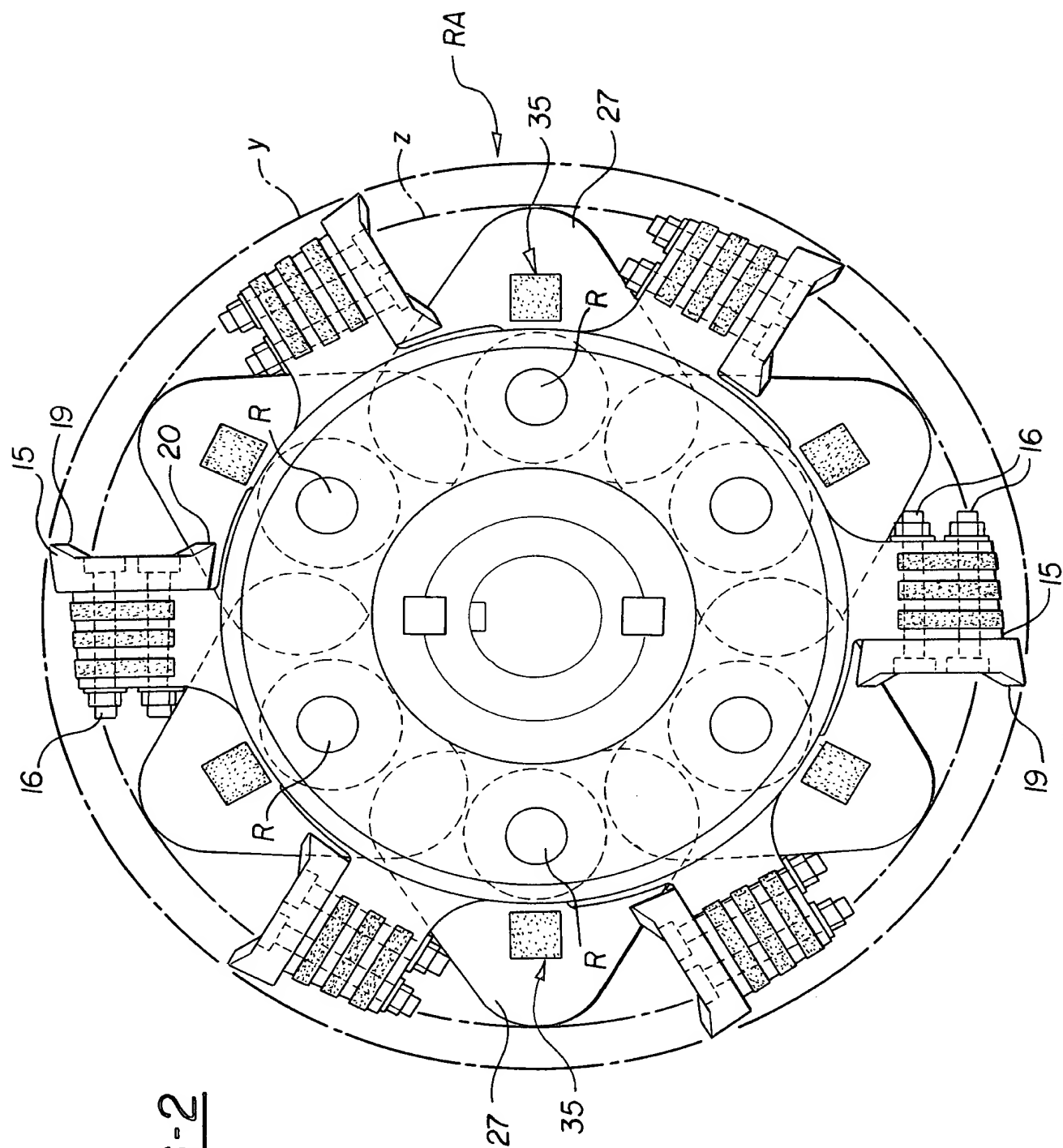


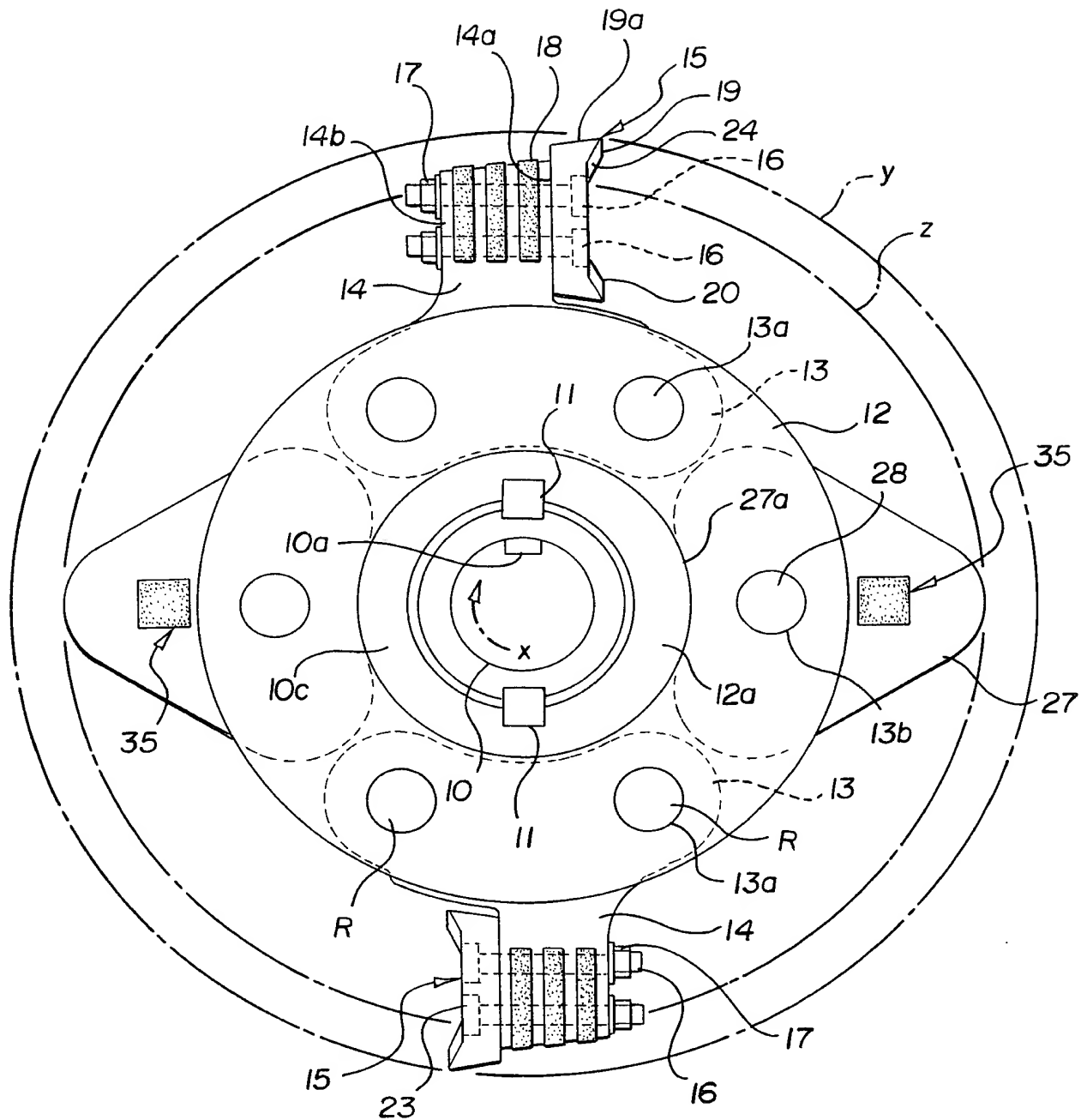
241  
30





**FIG-2**

FIG-3



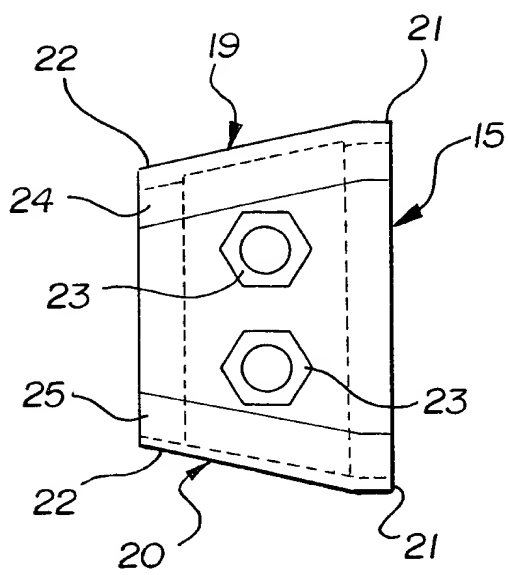


FIG-4

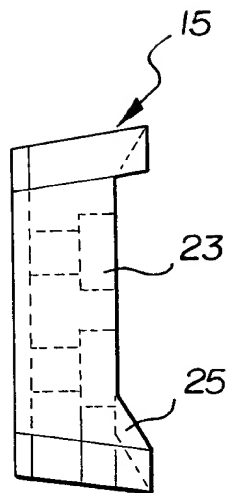


FIG-5

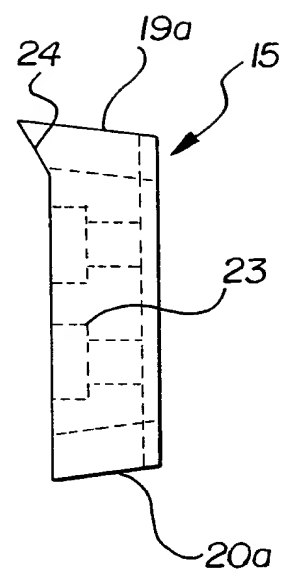


FIG-6

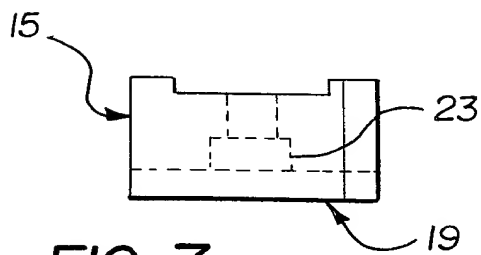


FIG-7

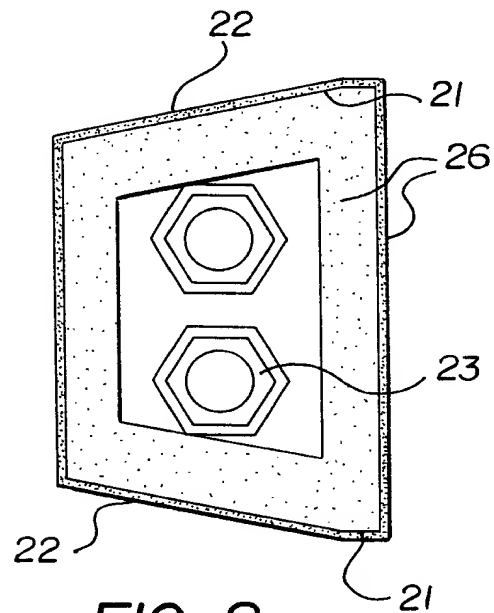


FIG-8

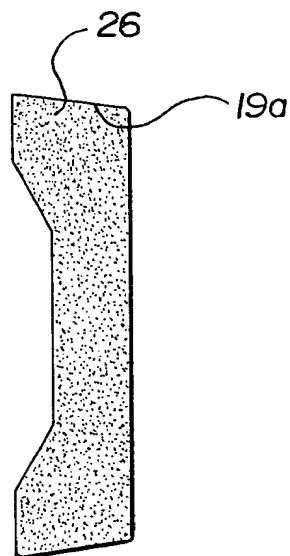


FIG-9

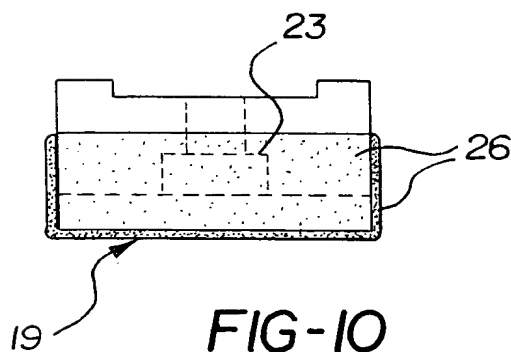
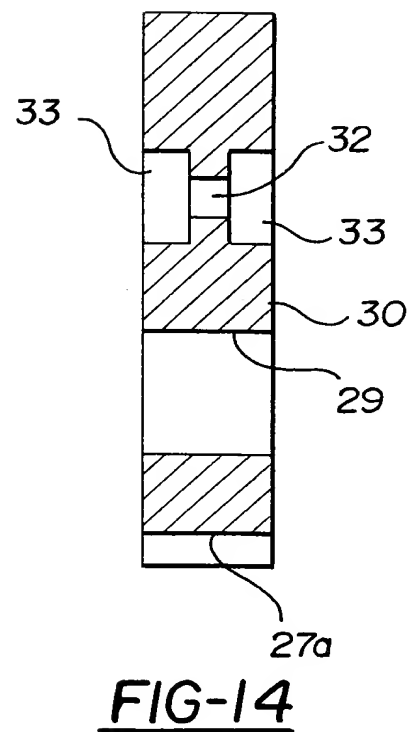
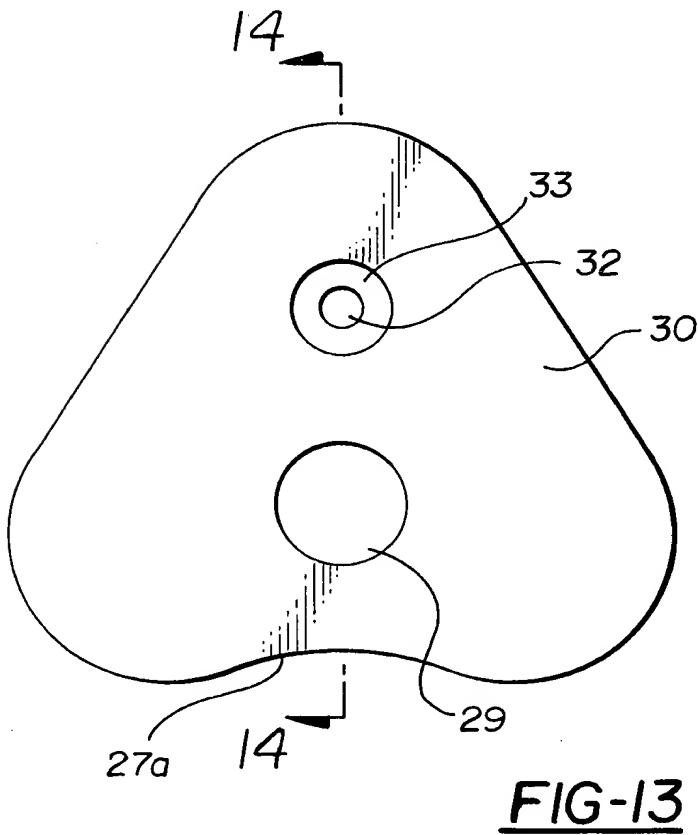
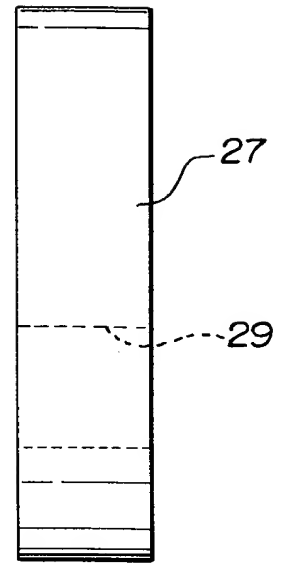
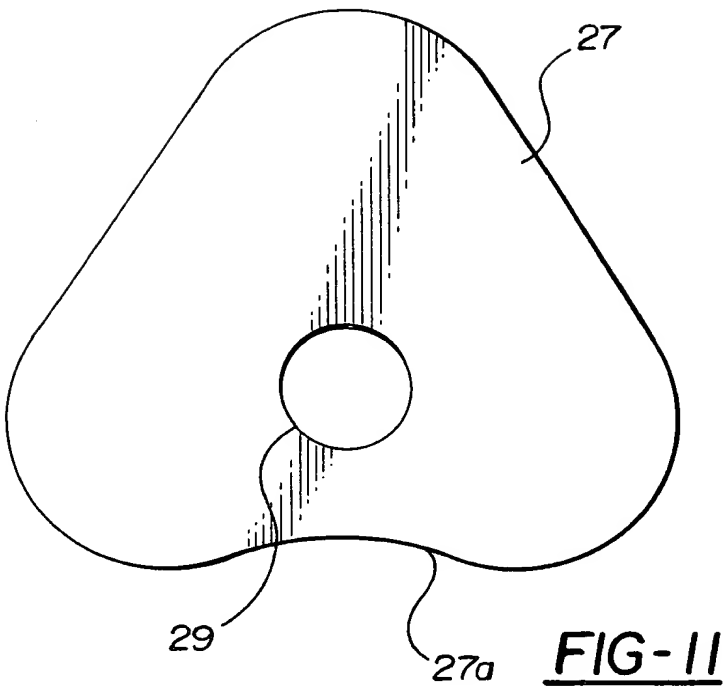


FIG-10



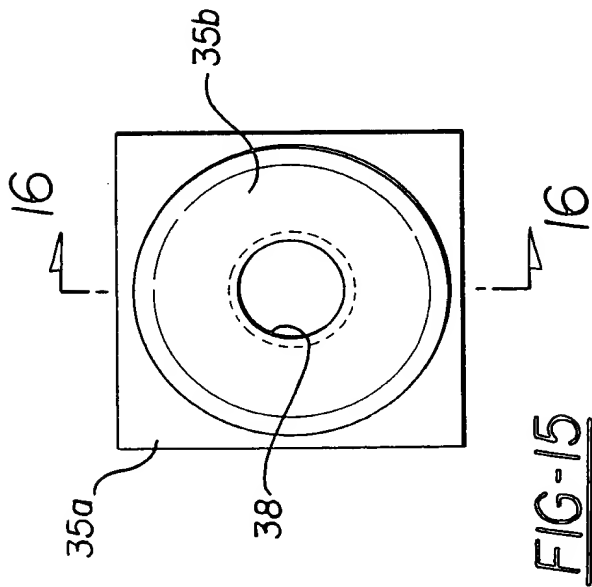


FIG-15

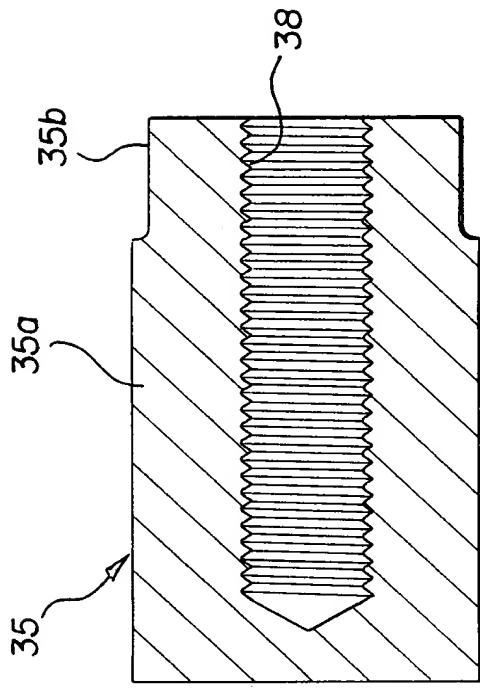


FIG-16

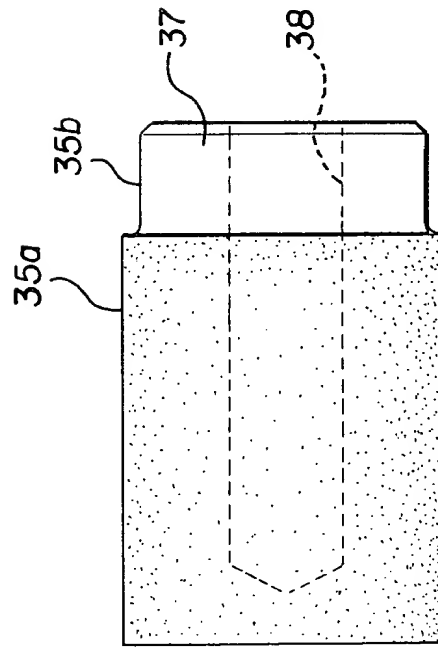


FIG-17

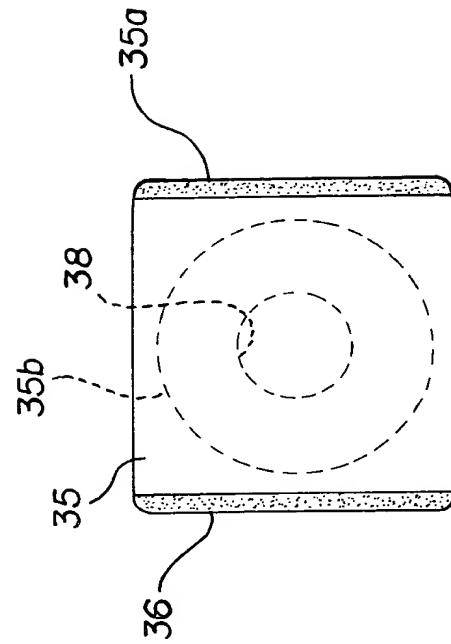


FIG-18

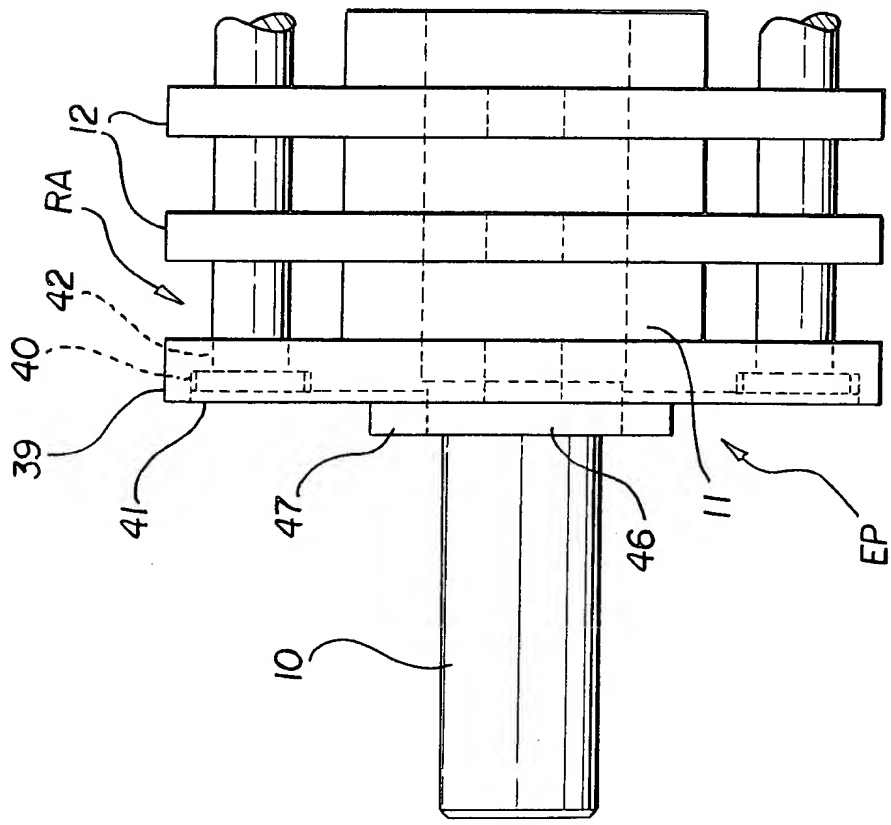


FIG-19

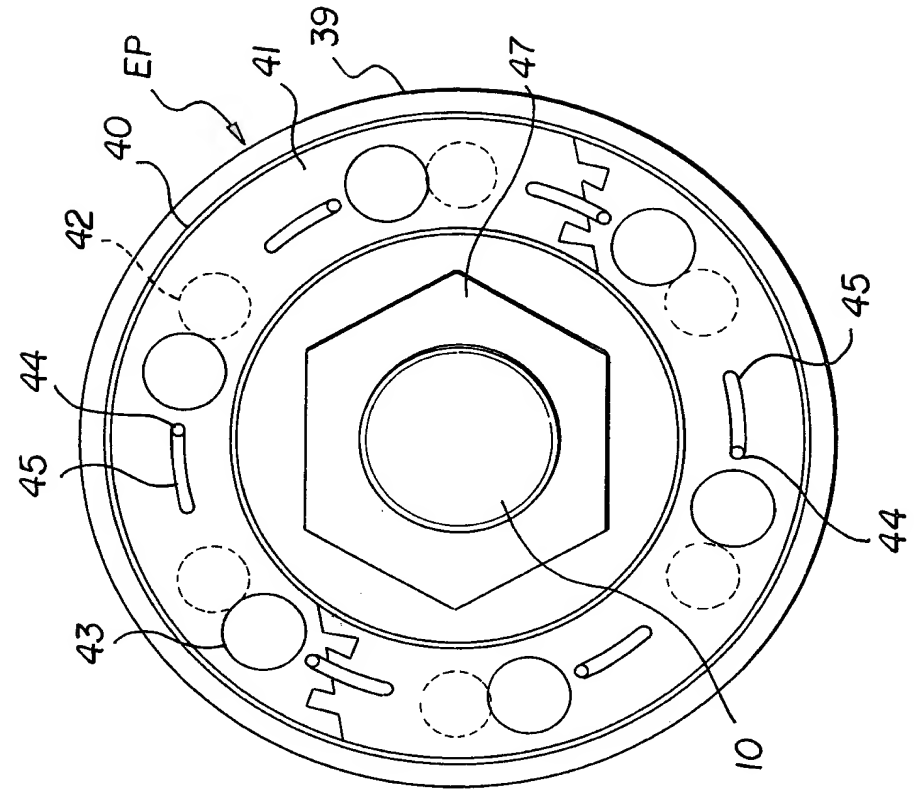


FIG-20

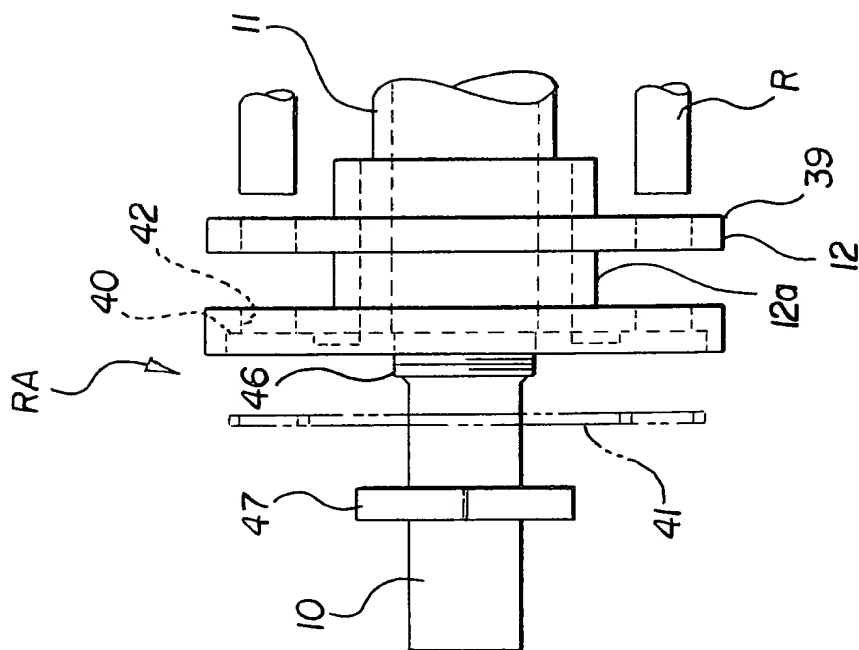


FIG-21

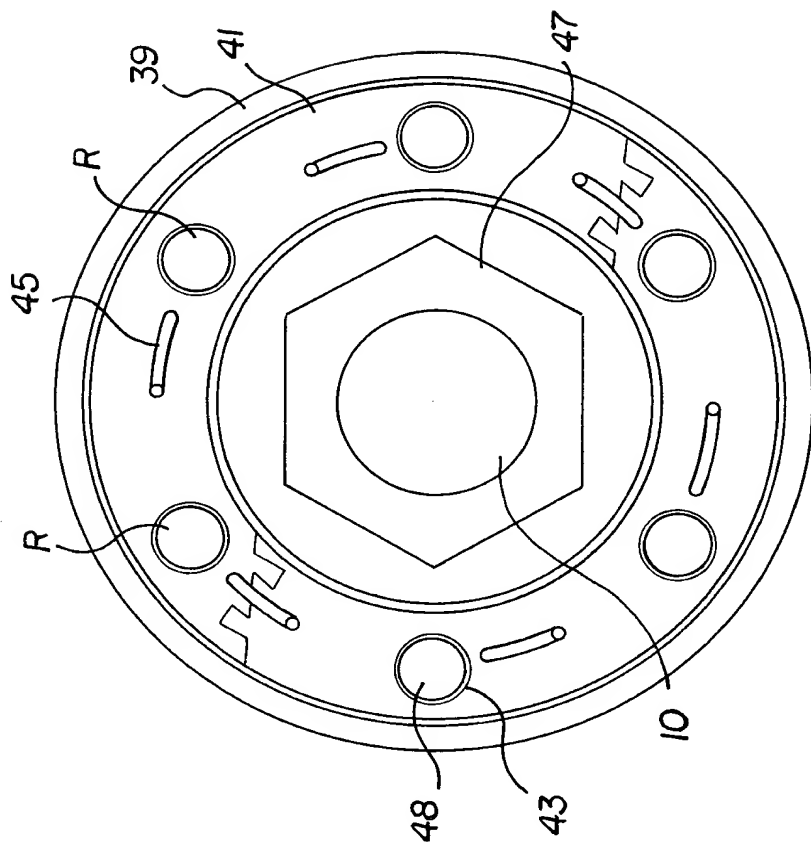
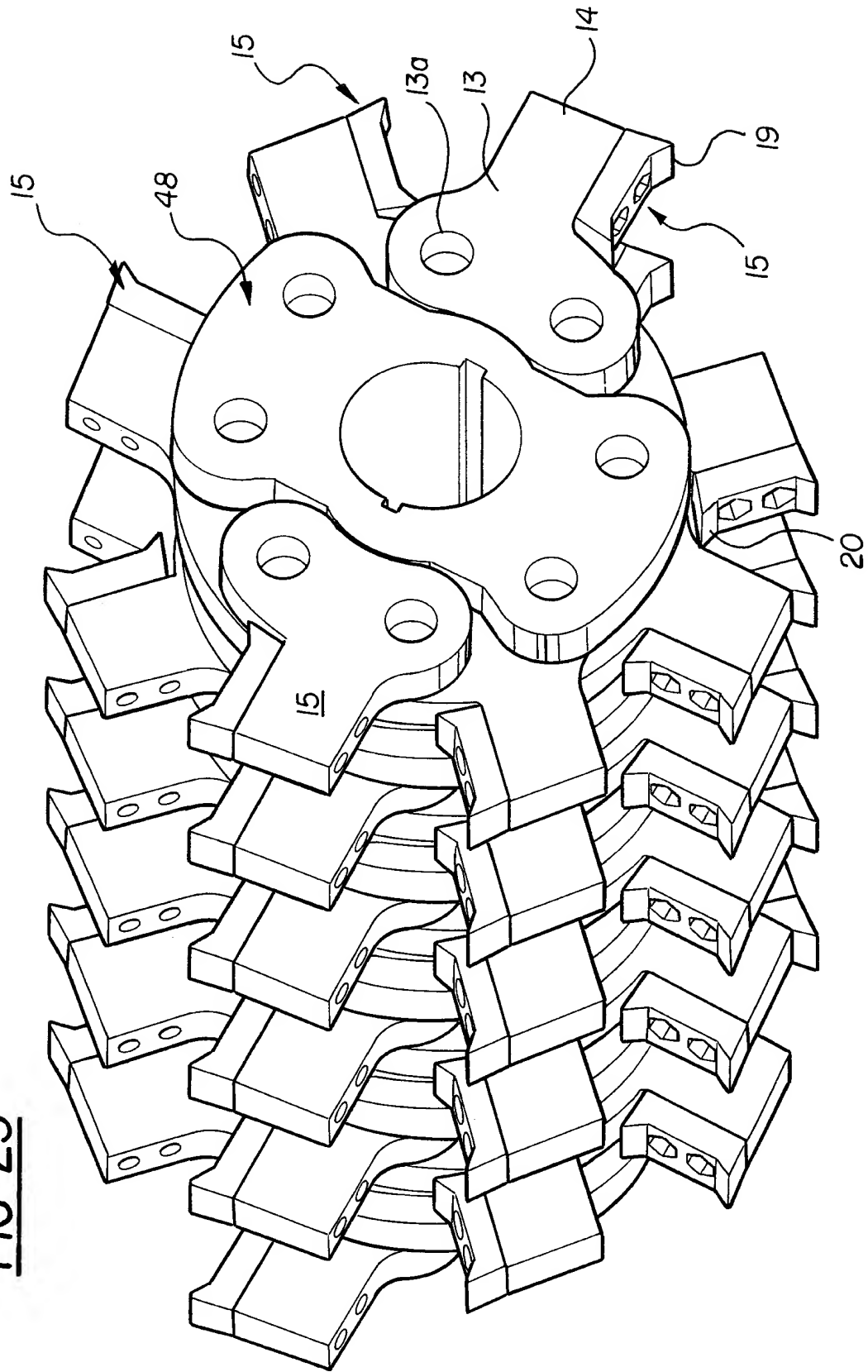


FIG-22



**FIG-23**



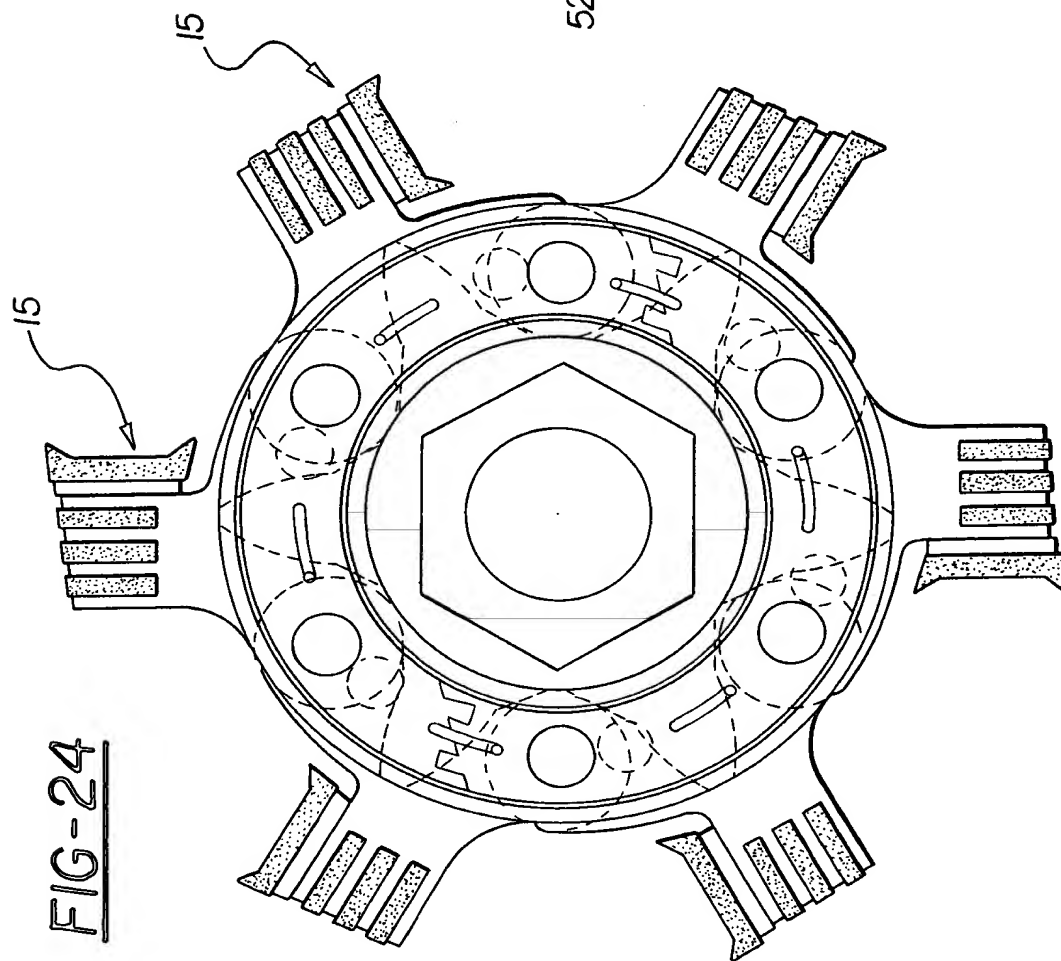


FIG-24

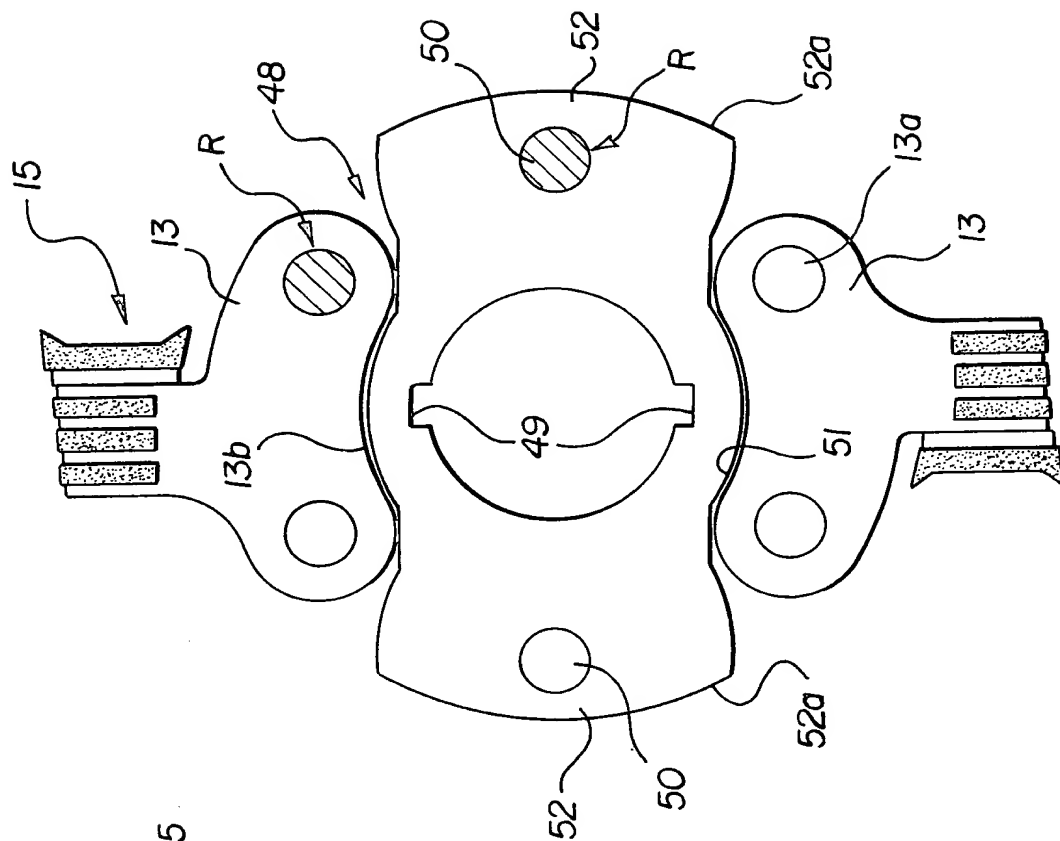


FIG-26

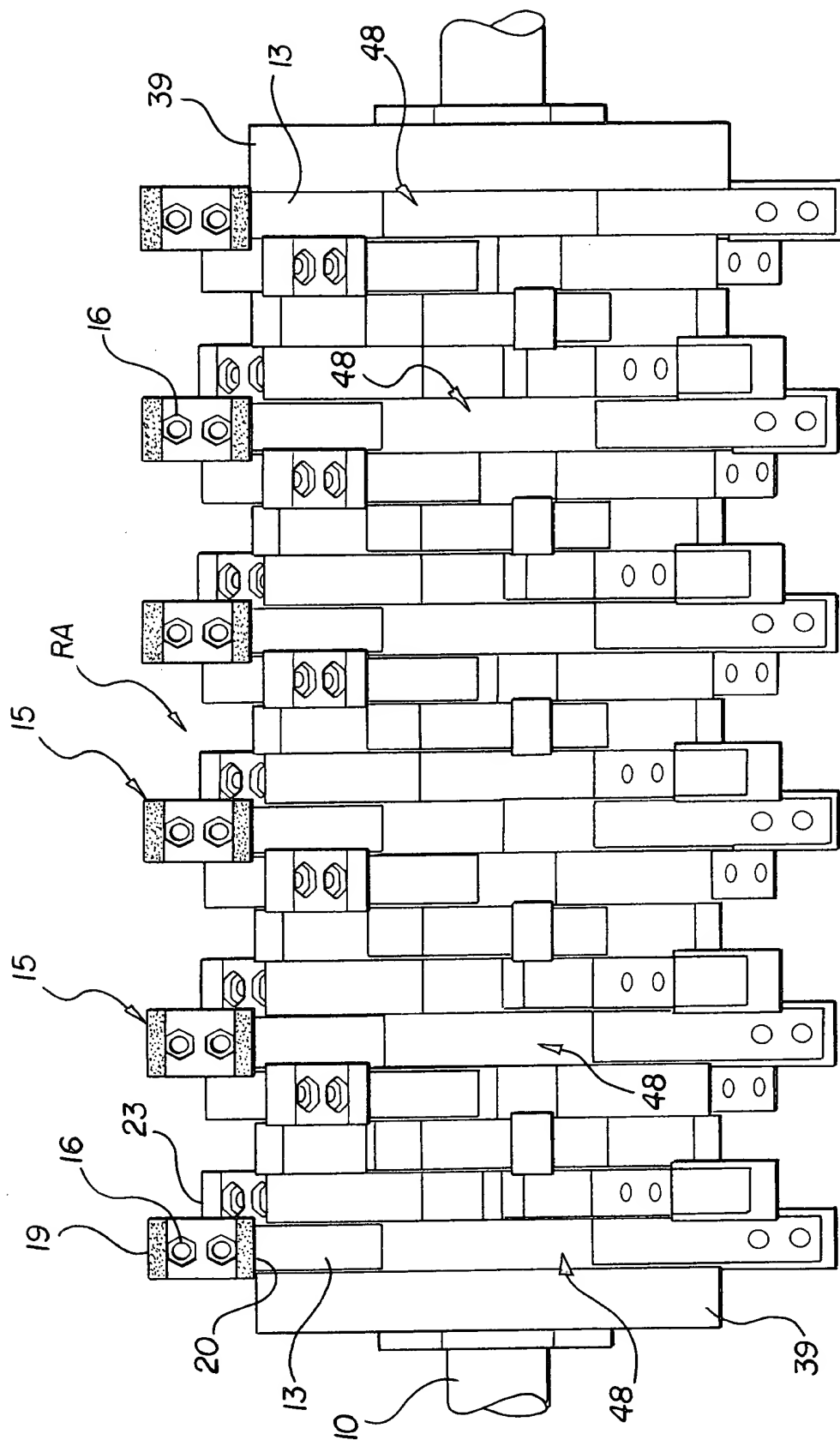


FIG-25

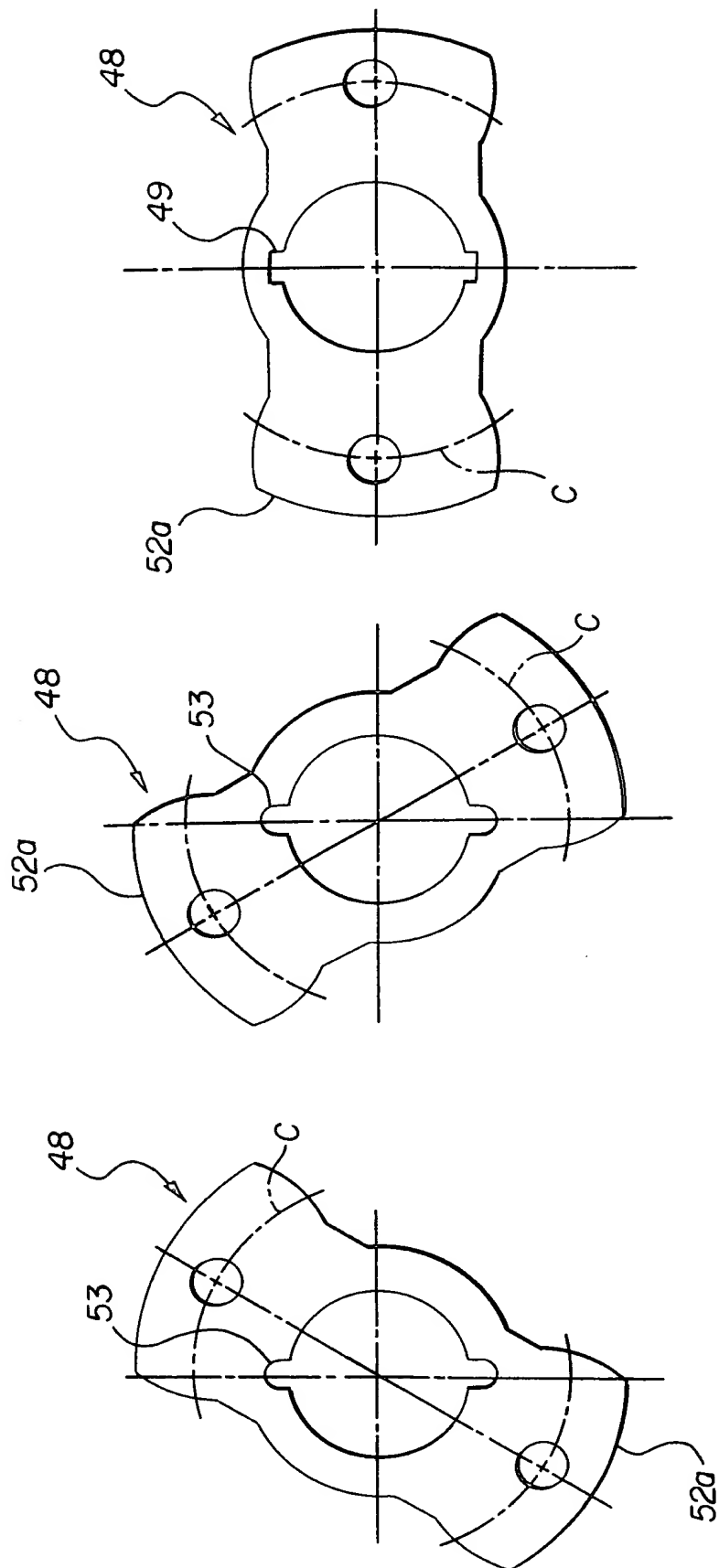


FIG-27

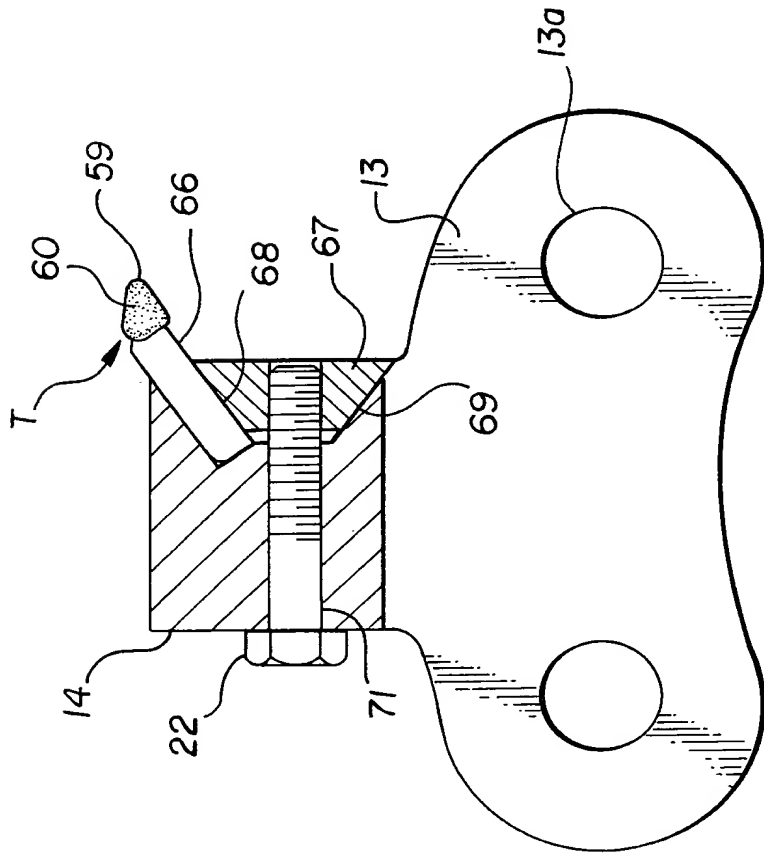


FIG-28

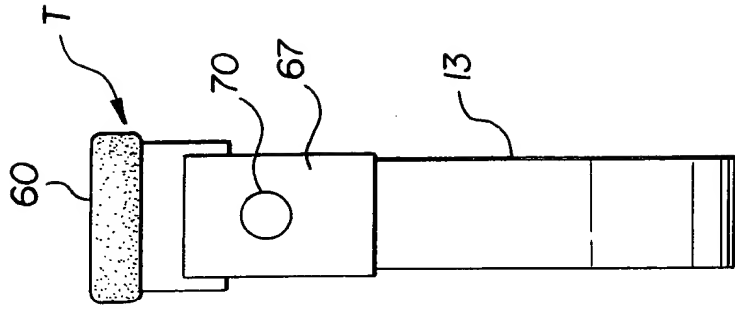


FIG-30

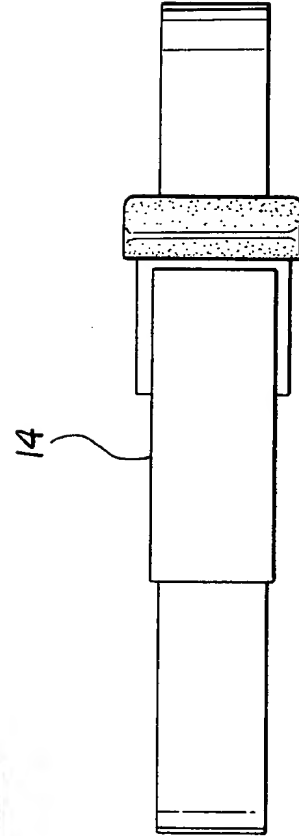


FIG-29

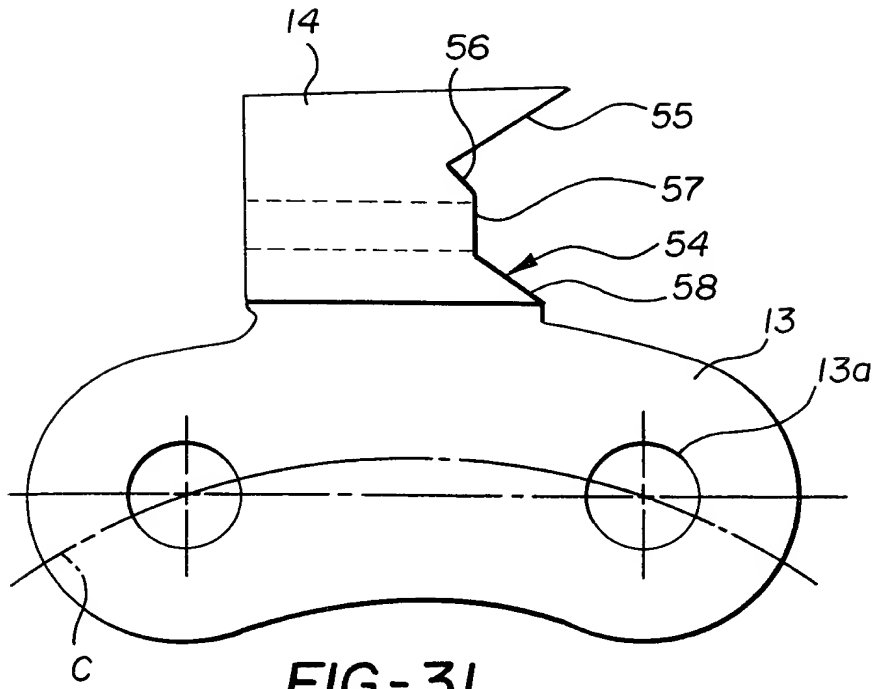


FIG-31

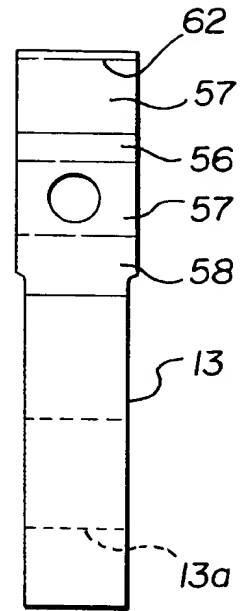


FIG-32

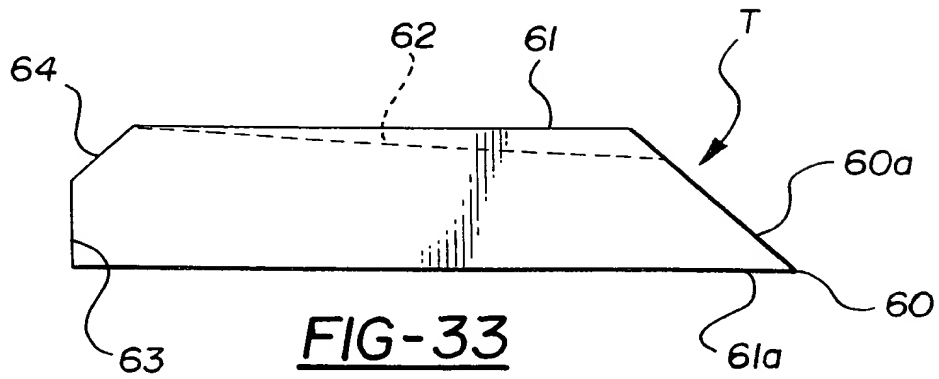


FIG-33

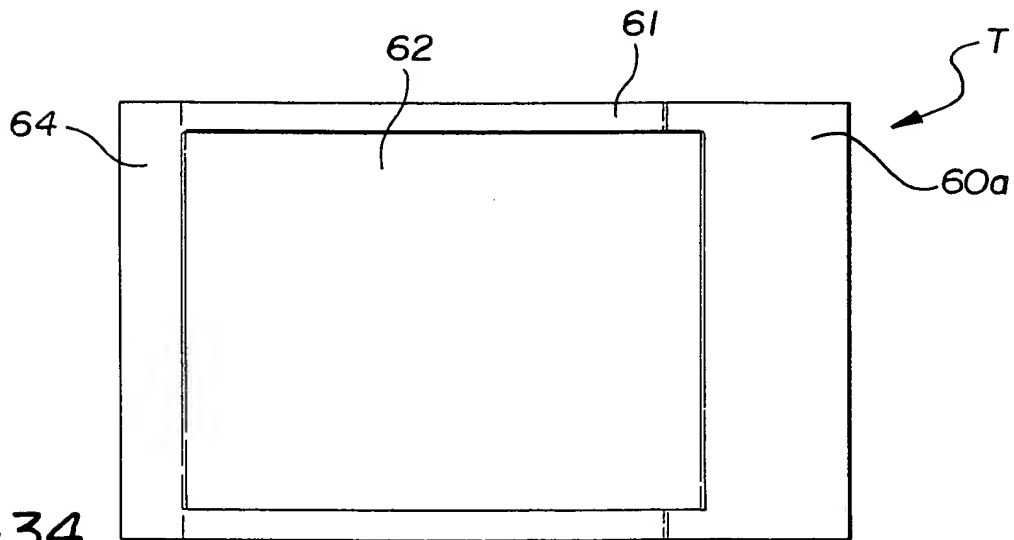


FIG-34

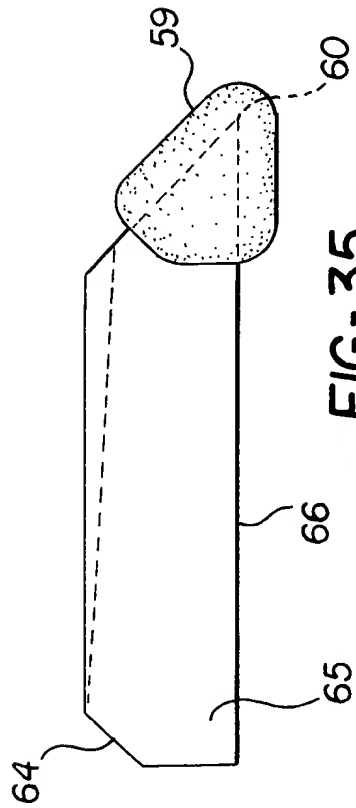


FIG-35

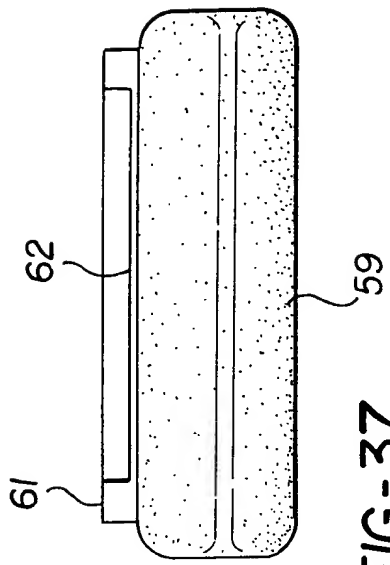


FIG-37

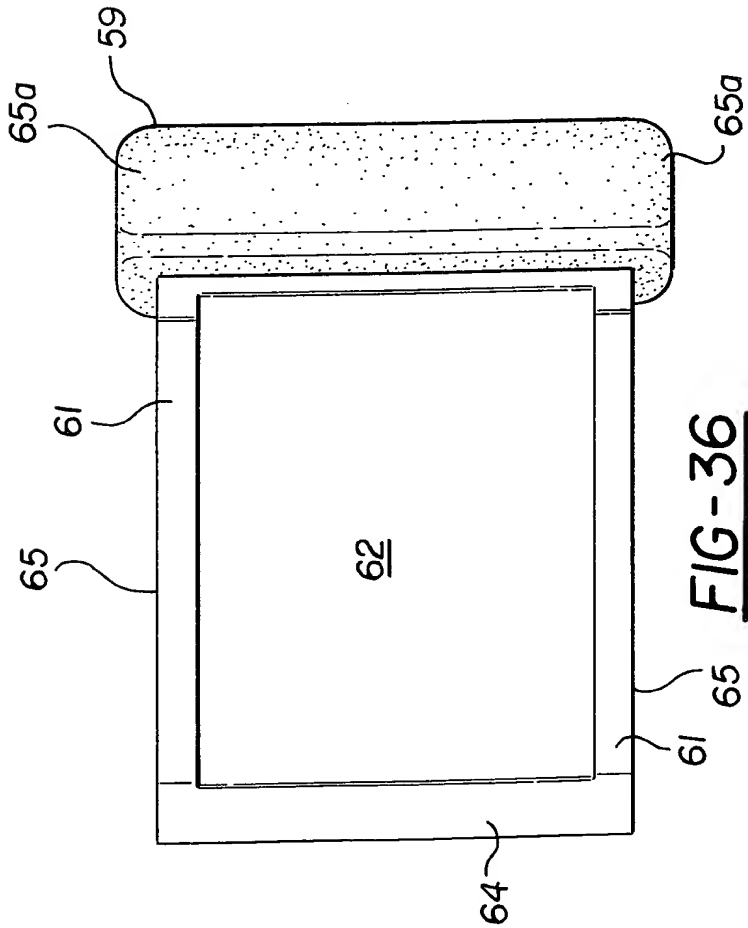


FIG-36

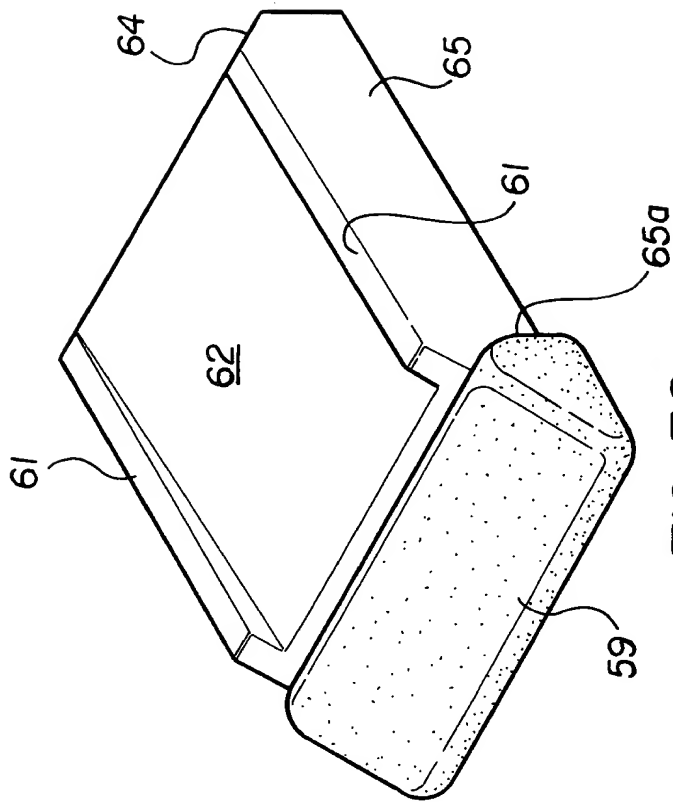
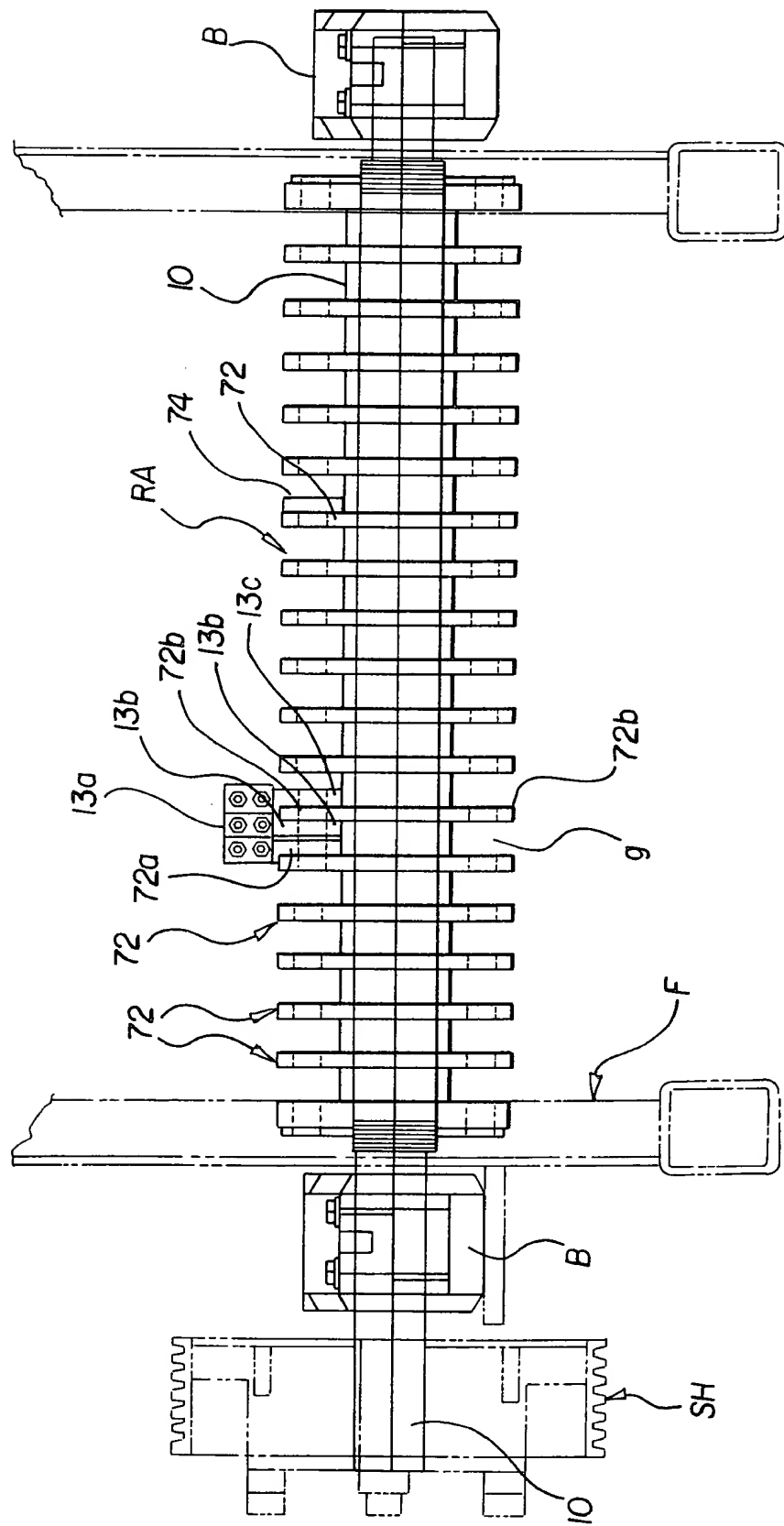
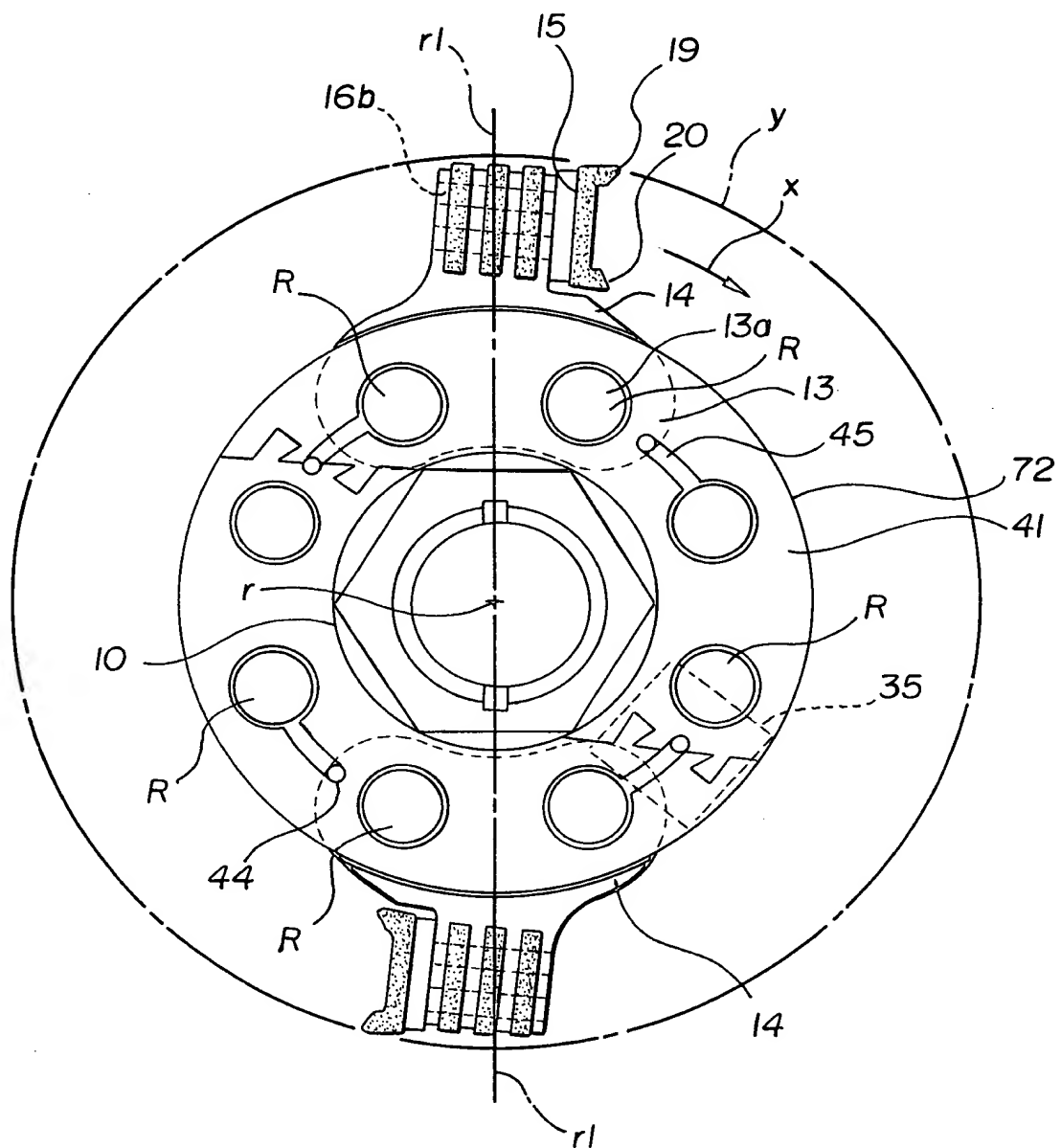


FIG-38

FIG-39





[illegible]

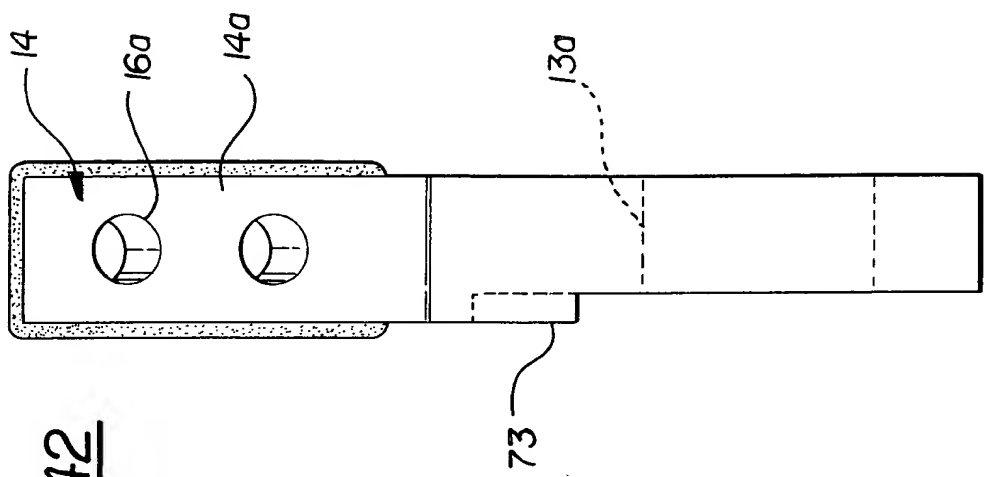
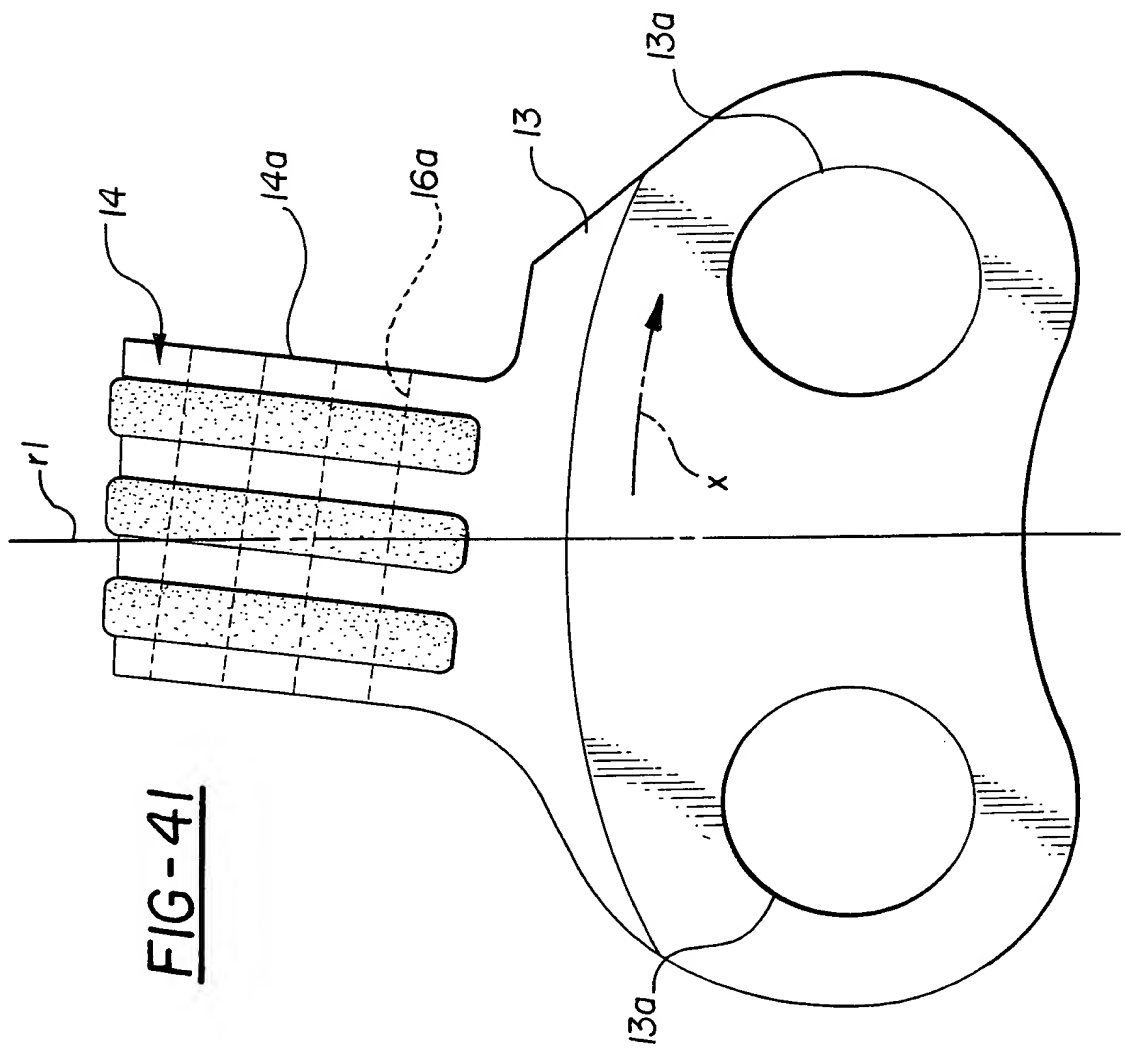


FIG-43

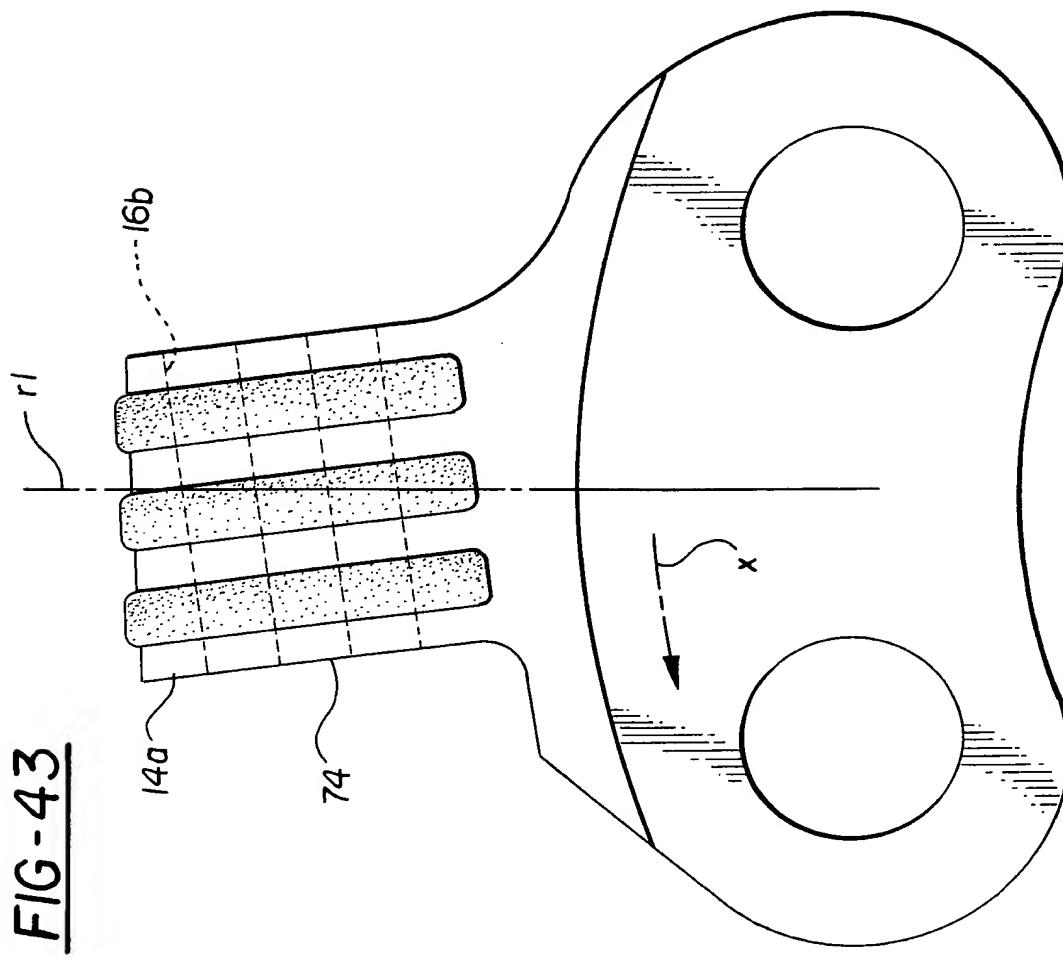


FIG-44

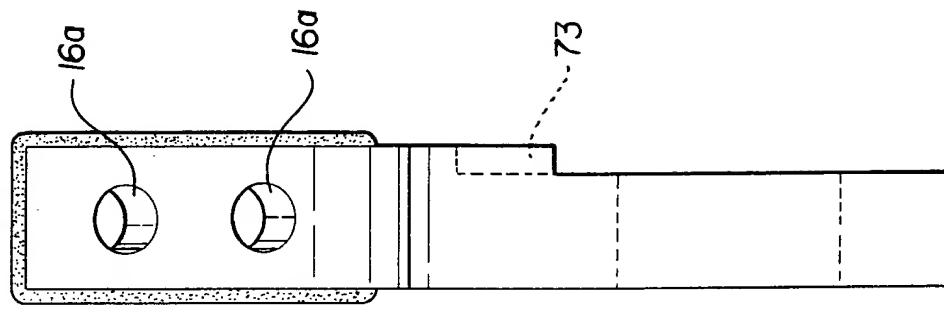


FIG-45

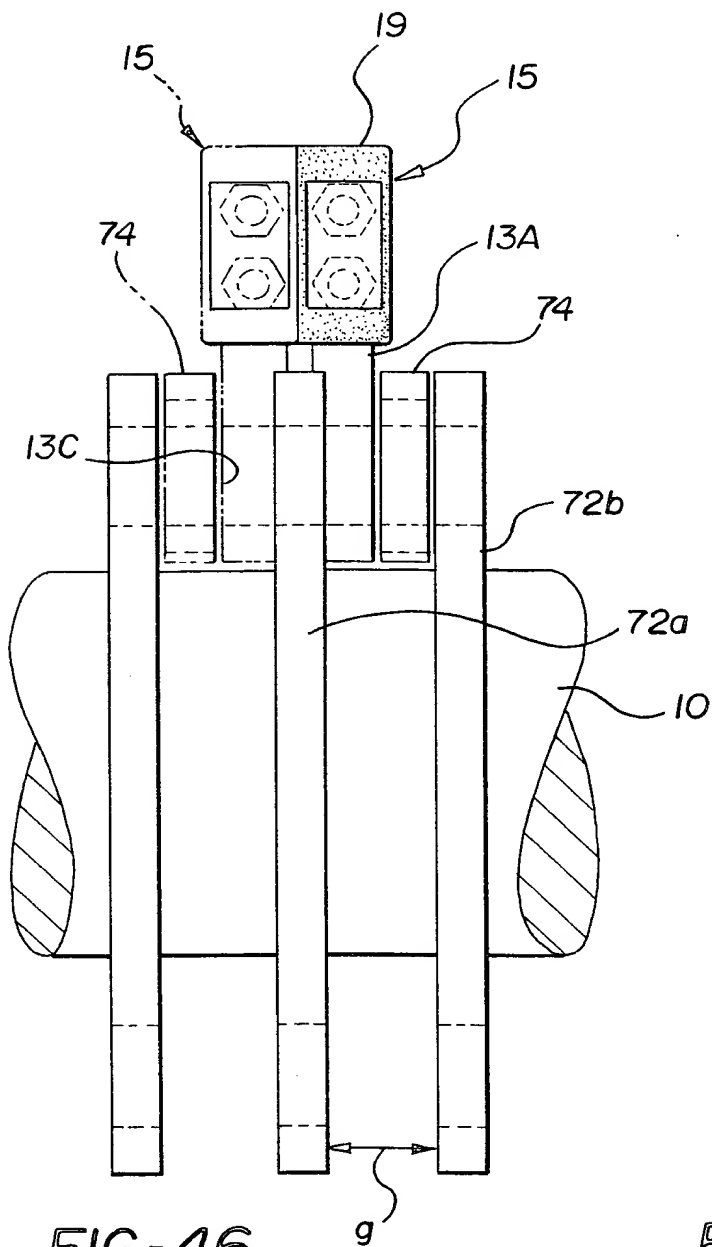
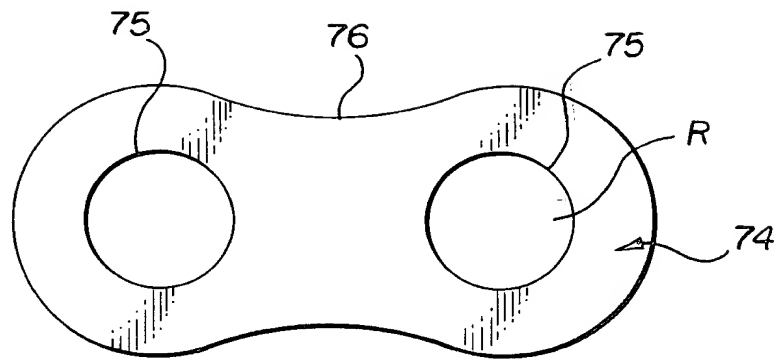


FIG-46

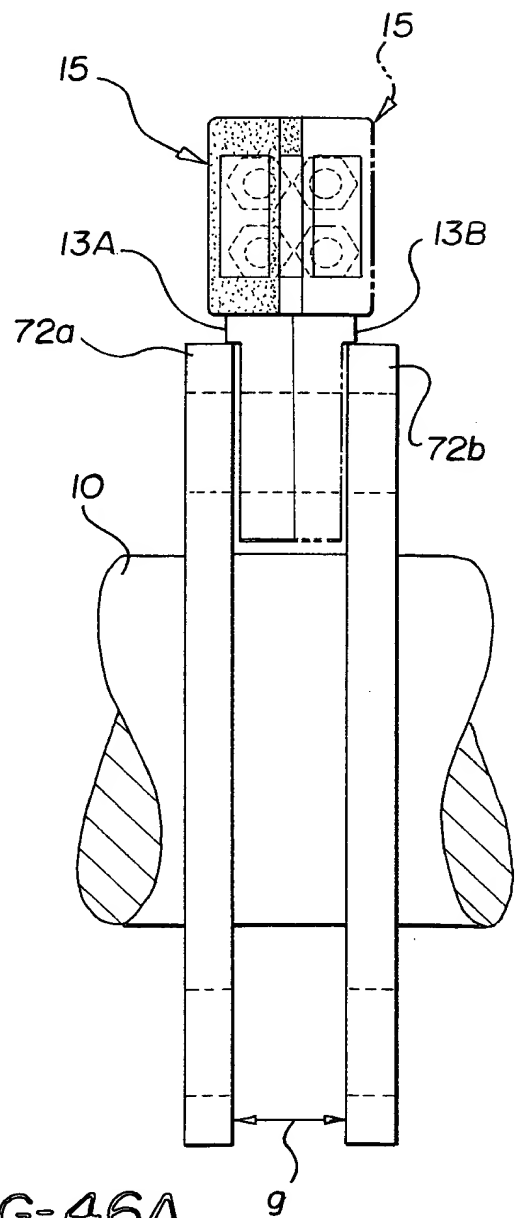


FIG-46A

Chemical	Concentration	Temperature	Time	Yield	Purity	Characterization
1,2-Dichloroethane	0.1 M	25 °C	24 h	85%	98%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	78%	95%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	72%	92%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	75%	96%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	70%	90%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	73%	94%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	68%	88%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	71%	91%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	65%	85%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	69%	89%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	62%	82%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	66%	86%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	60%	80%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	63%	83%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	58%	78%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	61%	81%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	55%	75%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	59%	79%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	52%	72%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	56%	76%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	50%	70%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	53%	73%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	48%	68%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	51%	71%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	45%	65%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	49%	69%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	42%	62%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	46%	66%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	40%	60%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	43%	63%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	38%	58%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	41%	61%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	35%	55%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	39%	59%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	32%	52%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	36%	56%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	30%	50%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	33%	53%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	28%	48%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	31%	51%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	25%	45%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	29%	49%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	22%	42%	<sup>1</sup> H NMR, IR, MS
1,1,2,2-Tetrachloroethane	0.1 M	25 °C	24 h	26%	46%	<sup>1</sup> H NMR, IR, MS
1,1,1,2-Tetrachloroethane	0.1 M	25 °C	24 h	20%	40%</	



## 36 FIXED HAMMERS 36 SPACERS

[illegible]